



**AMERICAN  
LOCK®**

*The Locksmith's Lock®*

# 2003 Padlock Service Manual & Reference Guide



# **Table of Contents**

## **Section One - Service Manual**



1. View of Generic Padlock
2. Disassembly/Reassembly of Series 1105, 1205, 1305, 5100, 5200, 5260, 5300, 5360, 5530, 5560, 5570
3. Generic Padlock In Open and Closed Position
4. View of Retainer
5. View of Series 700 Padlock
6. Disassembly/Reassembly of Series 700
7. View of Cylinder Detail PTC12/14
8. Rekeying PTC12/14 Cylinder - Option 1
9. Rekeying PTC12/14 Cylinder - Option 2
10. Key Spacing, Depth Information and Pin Dimensions
11. Restricted Keyways
12. View of Coverplates
13. View of Series 748 Padlock
14. Disassembly/Reassembly of Series 748
15. View of Cylinder Detail Series 2000 and 2010
16. Disassembly/Reassembly Series 2000 and 2010
17. View of Cylinder Detail Series 2500
18. Disassembly/Reassembly Series 2500
19. View of 780/790 Padlocks/Deadlock Retainer
20. Disassembly/Reassembly Series 780/790

### **Key-In-Knob**

21. View of Multi-Cylinder KIK Series 3600, 3700, 3800 Padlocks
22. Disassembly/Reassembly of KIK Series 3600, 3700, 3800
23. Drivers for KIK Series 3600, 3700, 3800
24. Key Advantage® Rekeying Instructions
25. Retainers for KIK Series 3600, 3700, 3800

### **Interchangeable Core**

27. View of IC Series 1405 Padlocks
28. Disassembly/Reassembly of IC Series 1405
29. View of IC Series 3105, 3200, 3260, 3560, 3570 Padlocks
30. Disassembly/Reassembly of IC Series 3105, 3200, 3260, 3560, 3570
31. View of IC Series 3900 Padlocks
32. Disassembly/Reassembly of IC Series 3900

### **Tubular**

33. View of Tubular Series 7200, 7260, 7300 Padlocks
34. Disassembly/Reassembly of Tubular Series 7200, 7260, 7300
35. View of Tubular Cylinder Detail
36. View of Cylinder Assembly with Driver for Tubular Series
37. Rekeying Instructions - Tubular Cylinder Series 7000, 7260, 7300
38. 7-Pin Center Tubular Lock Data Series 7000 & 8000
39. View of Tubular Cam Lock Construction Series 8000

### **Blade Tumbler Padlocks**

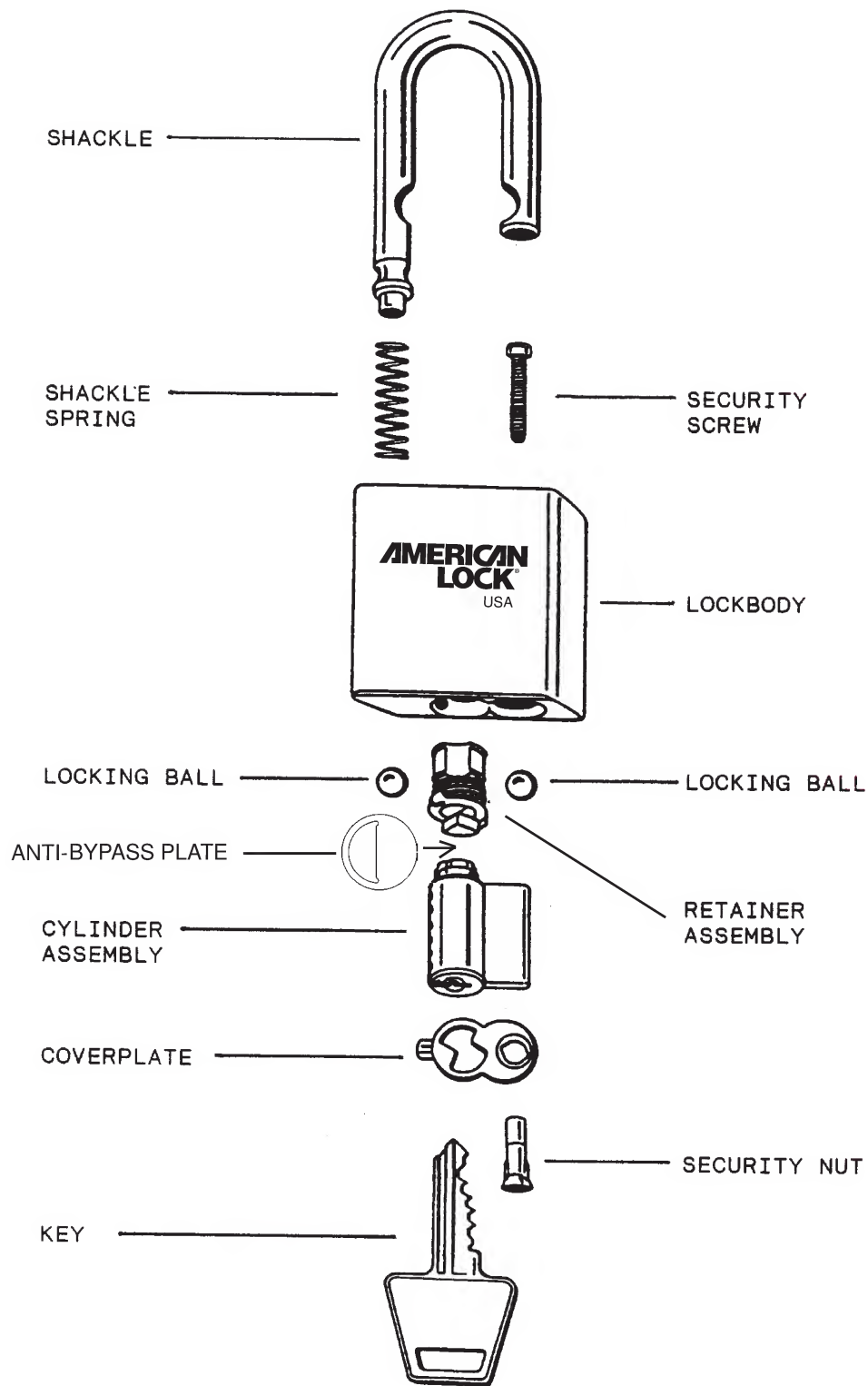
41. View of Blade Tumbler Series H10
42. Disassembly/Reassembly Blade Tumbler Cylinder Series H10
43. View of Blade Tumbler Series L50
44. Disassembly/Reassembly of Blade Tumbler Series L50
45. Cylinder Detail - Series H10 & L50

### **Laminated Padlock**

46. Rekeyable Laminated Padlock

## **Section Two - Service Parts PAGES 1-37**

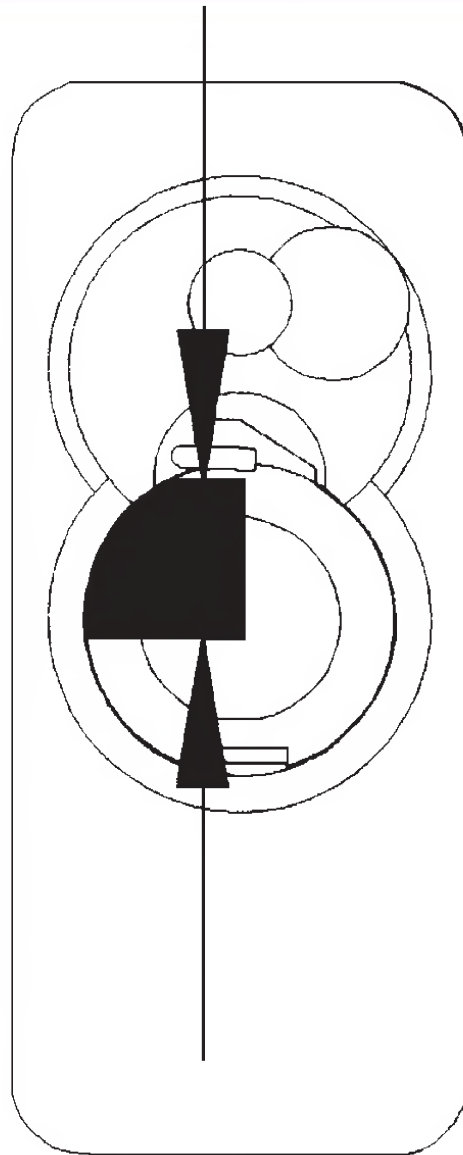




Example 1

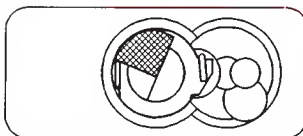
**View of Generic American Lock Company Lock**

**View of Retainer for Removal**



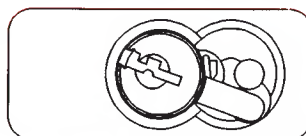
***Bottom of Lock Body Assembly***

**RETAINER**



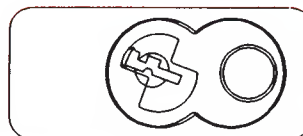
**View 1**  
Retainer assembly  
lock in locked  
position

**CYLINDER ASSEMBLY**



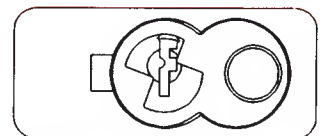
**View 2**  
Retainer assembly  
plus cylinder

**COVERPLATE LOCKED**



**View 3**  
Fully assembled  
lock in locked  
position

**COVERPLATE UNLOCKED**



**View 4**  
Fully assembled  
lock in open  
position



**SERIES 1105, 1205, 1305, 5100, 5200, 5260, 5300, 5360, 5530, 5560, 5570**

Using standard commercial retainer (non-key retaining feature)

**DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Remove the key.
3. Rotate shackle to expose shackle hole.
4. Using a #2 Phillips screwdriver, remove the security screw that is at the bottom of the exposed shackle hole.
5. Remove the security nut and coverplate.
6. Remove cylinder assembly and by-pass restriction plate.
7. Using needle nose pliers, grip retainer as shown in example 2.
8. While holding onto the lockbody and shackle, remove retainer.
9. Remove the shackle and shackle spring.
10. Remove the two ball bearings.

**REASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the close position. (Grasp body with hand and use table top to hold shackle.)
4. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
5. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
6. Push retainer down until it bottoms out in hole. (If the retainer assembly will not go to the bottom of the hole, it may be necessary to turn the retainer clockwise while pushing down on the retainer. This will line up the retainer pockets with the ball bearings and allow the retainer to be pushed to the bottom of the hole.)
7. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function.
8. Insert cylinder assembly with key removed and with by-pass restriction plate on end of plug into the lockbody. Rotate cylinder clockwise until the bible of the cylinder stops it from turning.
9. Insert coverplate and security nut.
10. While holding coverplate and security nut in position, check function of padlock by opening lock with key and closing shackle. If padlock does not function properly, try to identify the problem and correct, or disassemble and restart assembly again.
11. Open the padlock, rotate shackle to expose shackle hole, insert the security screw and tighten into security nut.

Note:

When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

**SERIES 700**

Using standard commercial retainer (non-key retaining feature)

**DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Remove the key.
3. Rotate shackle to expose shackle hole.
4. Using a #2 Phillips screwdriver, remove the security screw that is at the bottom of the exposed shackle hole.
5. Remove the security nut and coverplate.
6. Remove cylinder assembly and by-pass restriction plate.
7. Using needle nose pliers, grip retainer as shown in example 2.
8. While holding onto the lockbody and shackle, remove retainer.
9. Using a 1/8" Allen wrench, remove the dog point screw located on the back side of the lockbody.
10. Remove the shackle and shackle spring.
11. Remove the two ball bearings.

**REASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Screw in and tighten dog point screw using 1/8" Allen wrench.
4. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the closed position. (Grasp body with hand and use table top to hold shackle.)
5. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
6. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
7. Push retainer down until it bottoms out in hole.
8. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function.
9. Insert cylinder assembly with key removed and with by-pass restriction plate on end of plug into the lockbody. Rotate cylinder clockwise until the bible of the cylinder stops it from turning.
10. Insert coverplate and security nut.
11. While holding coverplate and security nut in position, check function of padlock by opening lock with key and closing shackle. If padlock does not function properly, try to identify the problem and correct, or disassemble and restart assembly again.
12. Open the padlock, rotate shackle to expose shackle hole, insert the security screw and tighten into security nut.

**Note:**

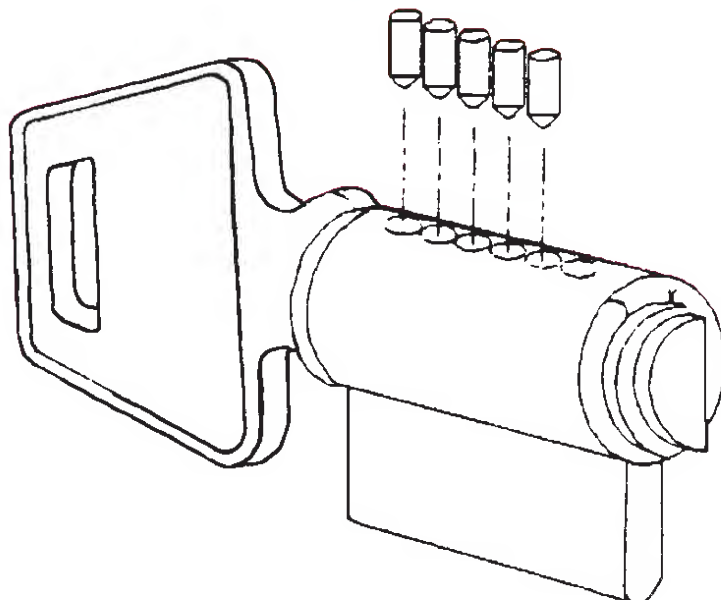
When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

**REKEYING THE PTC 12/14 CYLINDER**

(For Series 700, 748, 780, 790, 1105, 1205, 1305, 5100, 5200, 5260, 5300, 5360, 5530, 5560, 5570)

***Option 1*** (Remove and replace pins from bottom of cylinder assembly)

1. Remove cylinder from padlock.
2. Insert key and rotate key and plug 180 degrees (1/2 revolution).
3. Remove key and drop bottom pins through holes in the bottom of cylinder.
4. Turn cylinder over so that holes in cylinder are pointing up.
5. Insert new key and replace bottom pins through holes in cylinder, that match the new key depths. The tapered end of the pins point toward the key.  
(A #1 key cut gets a #1 bottom pin, a #2 key cut gets a #2 bottom pin, etc.)
6. Make sure that all pins are flush with top of plug.
7. When all pins are in place, return the key to neutral position by rotating key and plug 180 degrees (1/2 revolution) and withdraw key.
8. The cylinder is now ready to be reinstalled into padlock.

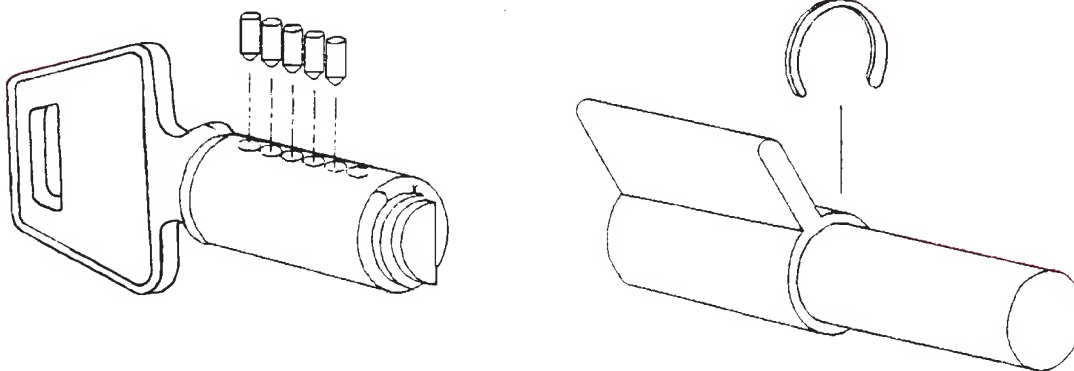
**PTC 12/14 CYLINDER**

**REKEYING THE PTC 12/14 CYLINDER**

(For Series 700, 748, 780, 790, 1105, 1205, 1305, 5100, 5200, 5260, 5300, 5360, 5530, 5560, 5570)

**Option 2** (Removal of plug from the cylinder assembly)

1. Remove cylinder from padlock.
2. Remove retaining ring from end of plug.
3. Insert key and rotate key and plug 45 degrees (1/8 revolution) counterclockwise.
4. Place the follower tool against the backside of the plug and slide the follower into the cylinder while pushing plug out. (Be careful not to have a gap between the plug and followers and allow the top pins and tumbler springs to fly out.)
5. Remove old bottom pins.
6. Insert new key and replace bottom pins that match new key depths. The tapered end of the pins point toward the key. (A #1 key cut gets a #1 bottom pin, a #2 key cut gets a #2 bottom pin, etc.)
7. Make sure that all pins are flush with top plug.
8. Place plug against follower and slide plug into the cylinder at the same 45 degree angle while pushing follower out. (Be careful not to have a gap between the plug and follower and allow the top pins and tumbler springs to fly out.) **This is a reverse of Step 4.**
9. Replace retaining ring on end of plug.
10. Return key to neutral position and remove key.
11. The cylinder is now ready to be reinstalled into the padlock.





**A.L.C. 5 & 6 PIN TUMBLER KEY SPACING & DEPTH**

SPACING <i>(.156" first, .125" inc.)</i>		PIN DIMENSIONS <i>(.093" / .094" Dia.)</i>		
<u>Depth</u>		<u>Bottom Pins</u>	<u>Master Pins</u>	<u>Top Pins</u>
1 - .2840"		1 - .1094"	2 - .0312"	.1406"
2 - .2684"		2 - .1250"	3 - .0468"	
3 - .2528"		3 - .1406"	4 - .0625"	
4 - .2372"		4 - .1562"	5 - .0781"	
5 - .2215"		5 - .1719"	6 - .0937"	
6 - .2059"		6 - .1875"	7 - .1093"	
7 - .1903"		7 - .2031"		
8 - .1747"		8 - .2187"		

### **SERIES 748**

Using standard commercial retainer (non-key retaining feature)

### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Remove the key.
3. Rotate the shackle to expose the shackle hole.
4. Using a 5/32" Allen wrench, remove the security screw that is at the bottom of the exposed shackle hole.
5. Remove the cylinder housing and slide the coverplate out using needle nose pliers.
6. Remove the cylinder assembly and by-pass restriction plate.
7. Using needle nose pliers, grip retainer as shown in example 2.
8. While holding onto lockbody and shackle, remove retainer.
9. Using a 1/8" Allen wrench, remove the dog point screw located on the back side of the lockbody.
10. Remove the shackle and shackle spring.
11. Remove the two ball bearings.

### **ASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Screw in and tighten dog point screw using 1/8" Allen wrench.
4. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the closed position. (Grasp body with hand and use table top to hold shackle)
5. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
6. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
7. Push retainer down until it bottoms out in hole.
8. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function.
9. Insert cylinder assembly with key removed and with by-pass restriction plate on end of plug into the lockbody. Rotate cylinder assembly clockwise until the bible of the cylinder stops it from turning.
10. Insert coverplate into off centered plug hole and into slot in lockbody with needle nose pliers. (Letter stamped on coverplate must face outward.)
11. Insert cylinder housing into off centered hole of lockbody.
12. Insert key partially into cylinder assembly and rotate until slot of cylinder housing engages the bible of the cylinder causing the cylinder housing to bottom out.
13. While holding the cylinder housing in lockbody, check function of padlock by opening lock with key. If padlock does not function properly try to identify the problem and correct, or disassemble and restart assembly again.
14. Open the padlock, rotate shackle to expose shackle hole, insert the security screw and tighten into the cylinder housing.

Note:

When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

Service Parts reference page 16 - 18.

**SERIES 2000/2010 REKEYING INSTRUCTIONS****DISASSEMBLY** (Removing Cylinder)

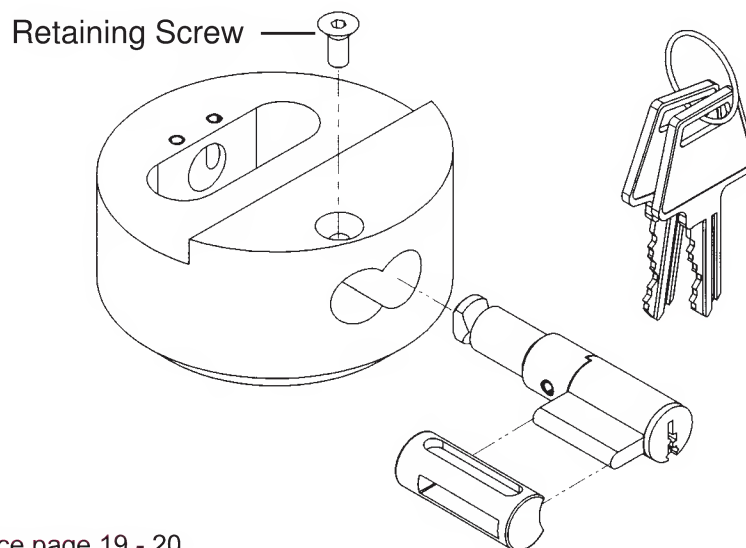
1. Remove putty or sticker from backside of lockbody that is covering cylinder retaining screw.
2. Remove screw with 3/32" Allen wrench.
3. Insert key and turn 90 degrees to open position.
4. Pull cylinder out of lockbody. Remove cylinder housing.

**REKEYING THE CYLINDER**

1. Remove key from cylinder assembly.
2. Remove tension pin that is securing retainer to cylinder.
3. Remove retainer from cylinder.
4. The pins may now be removed by:
  - Rotating key and plug 180 degrees, remove key and drop old pins through bottom of cylinder. Insert new key and the correct pins.
  - Rotating key and plug, push out plug with a follower tool. Remove old pins and replace with new pins that correspond to new key.
5. Return plug and key to neutral position and remove key.
6. Place retainer on end of cylinder and replace tension pin.

**ASSEMBLY** (Replacing Cylinder)

1. Insert key and turn key and plug 90 degrees clockwise. Place cylinder housing on bible.
2. Insert cylinder assembly in lockbody and turn key 90 degrees counterclockwise to locked position.
3. Re-insert screw and tighten.



## **SERIES 2500 REKEYING INSTRUCTIONS**

### **DISASSEMBLY OF PADLOCK**

1. Push shackle pin into lockbody until it locks closed.
2. Remove key from cylinder and rest the lock face down on work bench.
3. Remove the 5 flat head screws (3/32 Allen wrench) that fasten the rear cover plate.
4. Remove cover plate.
5. Remove lock bar spring (hold lockbar down while removing spring).
6. Compress and hold shackle pin from outside of body. Remove the lockbar.
7. Release and remove the shackle pin and shackle pin spring.
8. Remove the lockbar driver located at the drive end of the cylinder assembly.
9. Remove the cylinder assembly and cylinder sleeve.
10. Remove the cylinder cover retainer.

### **ASSEMBLY OF PADLOCK**

1. With the lock laying face down place the cylinder cover retainer into the cylinder hole of lockbody.
2. Slide the cylinder sleeve over the cylinder assembly if not already assembled.
3. Place assembly into the cylinder hole of the lockbody with the drive end of cylinder assembly facing toward you.
4. Position the lockbar driver and engage it on to the cylinder plug.
5. Assemble the shackle pin spring over the shackle pin. Insert and hold it into the lockbody with the notch of the shackle pin visible through slot in the lockbody.
6. Place lockbar into the slot of the body and slide it against the lockbar driver. Release the hold on the shackle pin.
7. Insert the lockbar spring (hold lockbar down while installing the spring).
8. Insert the cover plate into the counter bored area of the lockbody with the counter sunk holes facing toward you and the cutout slot aligned with the matching cutout slot of the lock body.
9. Attach the 5 flat head mounting screws.
10. Insert key in to key way and check for proper operation. Rotating the key clockwise will cause the shackle pin to spring outward. Return and remove the key then push the shackle pin closed.
11. The lock functions as non-key retaining only.

## **SERIES 780/790 REKEYING INSTRUCTIONS**

### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle. *Note:* These locks do not have shackle springs, so shackle must be pulled open manually.
2. Having pulled shackle up, rotate to expose the shackle hole and the Allen head security screw at the bottom of the hole.
3. Using a 5/32" Allen wrench, and supporting the cylinder housing on the lock bottom, remove the security screw.
4. While supporting the cylinder housing, close the shackle, re-lock the cylinder and then remove the key.
5. Remove the cylinder housing and slide the coverplate out using needle nose pliers.
6. Remove the cylinder assembly.
7. Place the bottom of the lock on a flat surface and gently tap the body to disengage the retainer.
8. Using a 1/8" Allen wrench, remove the dog point screw located on the back side of the lockbody.
9. Remove the shackle.
10. Remove the three ball bearings. *Note:* Ball bearings on the Model 790 are 3/8" diameter and 5/16" diameter for the model 780.

### **ASSEMBLY OF PADLOCK**

1. Insert shackle into shackle hole and hold in closed position.
2. Insert dog point screw in hole on backside of lock and tighten using a 1/8" Allen wrench.
3. Hold the lockbody with cylinder hold pointing upward and the shackle in the closed position. (Grasp body with hand and use flat surface to hold the shackle.)
4. Insert two ball bearings one at a time down the cylinder hole and position them into the ball nest hole on the same side as the shackle retaining screw. Insert the third ball bearing down the cylinder hole and position in the opposite ball nest hole. (Light grease may be needed for lubrication and to keep the ball bearing in place.)
5. Insert retainer in center hole with cut out section (half-moon) facing upward. Orientate the higher surface inline with the security screw hole. (See view of retainer.)
6. Push retainer down until it bottoms out in hole.
7. With key removed, insert cylinder assembly into cylinder hole. Rotate cylinder assembly clockwise until the bible of the cylinder prevents it from turning.
8. Using needle nose pliers, insert coverplate into slot in cylinder hole. (See assembly diagram.)
9. Insert cylinder housing into hole in lockbody.
10. Partially insert key into cylinder and use it to help guide the slot in the cylinder housing over the bible of the cylinder.
11. While supporting the cylinder housing, turn the lock upright, insert the key and open the lock to see that it functions properly. If it does not function, try to identify the problem and correct. This may require repeating the disassembly and assembly instructions.
12. With the lock in the open position rotate shackle to expose shackle hole, insert the security screw and with the 5/32" Allen wrench, tighten.

*Note:* When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle, must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.



### **MULTI-CYLINDER SYSTEM – KIK Series 3600, 3700, 3800**

Using standard commercial retainer (non-key retaining feature)

#### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Rotate shackle to expose shackle hole.
3. Using a #2 Phillips screwdriver for the 3600 and 3700 or a 1/8" Allen wrench for the 3800, remove the security screw that is at the bottom of the exposed shackle hole.
4. Remove the cylinder assembly and cylinder housing.
5. Using needle nose pliers, grip retainer as shown in example 2.
6. While holding onto the lockbody and shackle, remove retainer.
7. Remove the shackle and shackle spring.
8. Remove the two ball bearings.

#### **REASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the close position. (Grasp body with hand and use table top to hold shackle.)
4. Insert the two ball bearings one at a time through the center plug hole and into the ball nest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
5. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
6. Push retainer down until it bottoms out in hole
7. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function.
8. Insert cylinder assembly with cylinder housing into the lockbody. (The threaded hole of housing faces into the plug hole.)
9. While holding the cylinder assembly and cylinder housing in position, check function of padlock by opening lock with the key and closing shackle. If padlock does not function properly, try to identify the problem and correct, or disassemble and restart assembly again.
10. Open the padlock, rotate shackle to expose shackle hole, insert the security screw and tighten into the cylinder housing.

Note: When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly

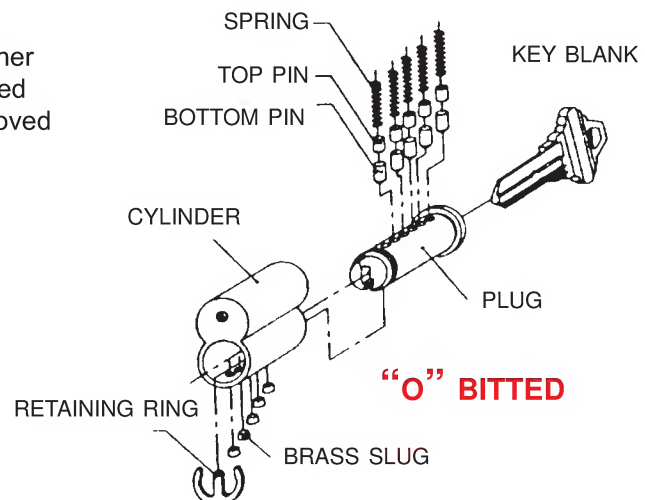
Service Parts reference page 25 - 26.

**KEY ADVANTAGE® PROGRAM REKEYING INSTRUCTIONS**

1. Insert the key and turn the cylinder to open the shackle.
2. Return the key to the neutral position and remove from the cylinder.
3. Rotate the shackle to expose the shackle hole.
4. Using a Phillips screwdriver, remove the screw that is at the base of the exposed shackle hole.
5. Remove the cylinder from the padlock.
6. Remove the retaining ring from the end of the plug.
7. Insert the key and rotate the key and plug 90 degrees (1/4 revolution) counter-clockwise.
8. Place the follower tool against the back side of the plug and slide the follower into the cylinder, maintaining a steady forward pressure, while pushing the plug out. (Note: be careful not to have a gap between the plug and the follower as this will allow the top pins and tumbler springs to fly out.) It is recommended that a universal follower tool be used. A Kwikset follower tool will not work in this particular application.
9. Remove the old bottom pins.
10. Insert the new key and insert the bottom pins that match the new key depths. The tapered end of the pins point toward the key. Make sure that all the pins are flush with the tope of the plug.
11. Place the re-pinned plug against the follower at the same 90 degree angle in Step #7 and slide the plug into the cylinder while pushing the follower out. (Note: be careful not to have a gap between the plug and the follower as this will allow the top pins and tumbler springs to fly out.)
12. Return the key to the neutral position and remove the key while holding the plug into the cylinder. (Note: be careful not to pull the plug out of the cylinder.)
13. Replace the retaining ring on the end of the plug.
14. Insert the cylinder into the lockbody.
15. While holding the cylinder in position, check the function of the padlock by opening and closing the lock with the key. If the padlock does not function properly, remove the cylinder, identify the problem, and correct.
16. Open the padlock, insert the screw, and tighten.

**Note:**

When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.



**MULTI-CYLINDER SYSTEM SERIES 1405**  
**Uses YALE 1220 Large Format**  
**INTERCHANGEABLE - REMOVABLE CORE**

**DISASSEMBLY OF PADLOCK**

1. Remove the large format Yale 1220 interchangeable core using the control key. Note the retainer driver located on the end of the plug.
2. Rotate the retainer to the open position (clockwise until shackle opens).
3. Using a needle nose pliers, grab across the half round shape of the retainer and pull outward and set down on work surface.
4. Remove shackle and shackle spring.
5. Remove the two ball bearings.
6. Separate the retainer stop from the retainer.

**ASSEMBLY OF PADLOCK**

1. Assemble the retainer stop into the under cut area of the retainer. Rotate the retainer clockwise until it contacts the edge of the retainer stop. Set it on work surface with the half round shape of the retainer facing upward.
2. Insert shackle spring into shackle hole.
3. Insert shackle into shackle holes and hold in closed position. Hold the lockbody with the cylinder plug holes pointing upward and the shackle in the closed position (Grasp body with hand and use table top to hold shackle).
4. Insert the two ball bearings one at a time through the center plug hole and into the ball nest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (Light grease may be needed to keep the ball bearings from falling out of position.)
5. Pick up the retainer and retainer stop (previously assembled) with a needle nose pliers by gripping across the half round shape of the retainer.
6. Insert the retainer and retainer stop assembly into the center plug hole until it bottoms out. The radius projection of the retainer stop must align with and plug into the radius pocket located between the two plug holes of the lock body.
7. Rotate the retainer counter clockwise until it contacts the edge of the retainer stop. Release the hold on the shackle which should then be in the locked position.
8. Position the driver on the end of the core's plug. Insert the core (use the control) key into the lock body, rotate key to center position and remove key.
9. Test lock function using the change key.

**INTERCHANGEABLE CORE – SERIES 3105, 3200, 3260, 3560, 3570**

Using standard commercial retainer (non-key retaining feature.)

**DISASSEMBLY OF PADLOCK**

1. Remove IC cylinder from padlock with control key.
2. \*Remove spacer from the two pins of the driver assembly.  
(Only if 6 pin cylinder is used.)
3. Remove retainer ring with a screwdriver.
4. Remove stop spacer and driver assembly (driver with two pins).
5. Using retainer turn tool, rotate retainer to open the shackle.
6. Using needle nose pliers, grip retainer as shown in Example 2.
7. While holding onto the lockbody and shackle, remove retainer.
8. Remove the shackle and shackle spring.
9. Remove the two ball bearings.

**REASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the close position. (Grasp body with hand and use table top to hold shackle.)
4. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
5. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
6. Push retainer down until it bottoms out in hole
7. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function and close shackle.
8. Place the driver assembly on to a flat surface with the two pins pointed up. The shorter pin to the 3:00 position and the longer pin to the 9:00 position.
9. Place stop spacer over the pins of the driver assembly with "T" facing down and the rounded end at the 12:00 position.
10. Insert and seat assembly into plug hole so driver and retainer engage with each other.
11. Drop retainer ring into plug hole next to driver assembly. With a screw driver, push retainer ring down into groove with open ends of ring facing the driver assembly.
12. \*If needed, place a spacer over the two pins of the driver assembly.
13. Insert IC cylinder and check lock for proper operation.

\*6 pin cylinder requires a spacer and a 7 pin cylinder does not require a spacer.

Note: When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.  
Service Parts reference pages 28 - 29.



**MULTI-CYLINDER SYSTEM SERIES 3900**  
**Uses SCHLAGE Large Format**  
**INTERCHANGEABLE - REMOVABLE CORE**

**DISASSEMBLY OF PADLOCK**

1. Remove interchangeable core with control key.
2. Remove driver and driver retainer with needle nose pliers.
3. Remove retainer assembly by first positioning retainer in open position. Use needle nose pliers, grasp retainer and remove.
4. Remove shackle and shackle spring
5. Remove ball bearings (2).

**ASSEMBLY OF PADLOCK**

1. Insert shackle spring into the deeper shackle hole.
2. Insert shackle into shackle holes and hold in closed position for the next step.
3. Insert one ball bearing into the center plug hole of the lock and into the ball nest hole. In the same manor, insert the second ball bearing into the other side of the ball nest hole. May need a small amount of grease to hold the ball bearings in position for the next step.
4. Retainer types and insertion:
  - For non key retaining function, insert the retainer assembly (retainer, spring and retainer washer) then release hold on the shackle.
  - For key retaining function, attach retainer stop to the key retaining retainer and insert assembly into lock body. Then release hold on the shackle.
5. Assemble the driver retainer onto the driver. Place assemble at the opening of the center plug hole with the stepped end of the driver facing into plug hole and the radius projection on the outside of the driver retainer aligned with the half round pocket located at the bottom of the shorter plug hole. A piece of tubing could be used to insert the assembly. Push assembly until it rests against the retainer.
6. Insert interchangeable core into the lock body by use of the control key. Rotate the key back to neutral position and remove it.
7. Try the lock for function by using the operating key.

Service Parts reference page 30.



### **TUBULAR CYLINDER – SERIES 7200, 7260, 7300**

Using standard commercial retainer (non-key retaining feature)

#### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Remove the key.
3. Rotate shackle to expose shackle hole.
4. Using a #2 Phillips screwdriver, remove the security screw that is at the bottom of the exposed shackle hole.
5. Remove the security nut and coverplate.
6. Remove cylinder assembly and driver.
7. Using needle nose pliers, grip retainer as shown in example 2.
8. While holding onto the lockbody and shackle, remove retainer.
9. Remove the shackle and shackle spring.
10. Remove the two ball bearings.

#### **REASSEMBLY OF PADLOCK**

1. Insert shackle spring into shackle hole.
2. Insert shackle into shackle holes and hold in closed position.
3. Hold the lockbody with cylinder plug holes pointing upward and the shackle in the close position. (Grasp body with hand and use table top to hold shackle.)
4. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
5. Insert retainer making sure that the retainer washer tab that is holding the spring is lined up with the half round hole in the lockbody.
6. Push retainer down until it bottoms out in hole
7. The shackle should now be in the closed position and held in place. Use the retainer turning tool and open the shackle to check function.
8. Attach driver to the end of the cylinder assembly. Orientation must be correct.
9. With key removed, insert cylinder assembly and driver into the plug hole. The rounded pin on the outside of the cylinder assembly aligns with the small rounded groove in the lockbody.
10. Insert coverplate and security nut.
11. While holding coverplate and security nut in position, check function of padlock by opening lock with key and closing shackle. If padlock does not function properly, try to identify the problem and correct, or disassemble and restart assembly again.
12. Open the padlock, rotate shackle to expose shackle hole, insert the security screw and tighten into security nut.

Note: When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

Service Parts reference pages 31 - 33.

## 7 Pin Center Tubular Lock Data

For American Lock Company  
Series 7000 & 8000

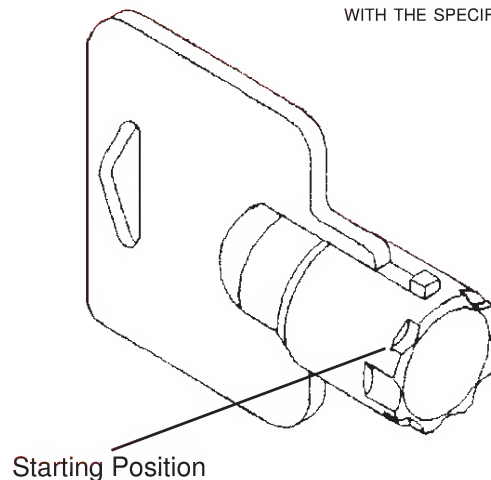
### KEY

Current Cut #	Cut Depth
1	- .0155"
2	- .0310"
3	- .0465"
4	- .0620"
5	- .0775"
6	- .0930"
7	- .1085"

### PINS

.078" / .079" Dia.			
Top Pin (COMBINATION PIN)		Bottom Pin (DRIVER PIN)	
1	- .2035" →	5	- .200"
2	- .2190" →	5	- .200"
3	- .2345" →	4	- .185"
4	- .2500" →	3	- .170"
5	- .2655" →	2	- .155"
6	- .2810" →	1	- .140"
7	- .2965" →	1	- .140"

SPECIFIC BOTTOM PINS (DRIVER PINS), MUST BE USED  
WITH THE SPECIFIC TOP PINS (COMBINATION PINS).



### **BLADE TUMBLER CYLINDER – SERIES H10**

Using standard commercial retainer (non-key retaining feature)

#### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Rotate shackle to expose shackle hole.
3. Using a flat blade screwdriver, remove the retaining screw that is at the bottom of the exposed shackle hole.
4. Rotate key counterclockwise approximately 30 degrees.
5. Place side of lockbody on flat surface with open shackle hole down. Hit side of the lock with a leather or plastic mallet. You are forcing the retaining pin into the space that the screw occupied. If you will refer to the drawing, you will notice that the pin retains the cylinder by protruding into the slot of the cylinder cap. The pin needs to move just enough to release the cylinder.
6. Use key to remove the cylinder assembly.
7. Close shackle and hold in position.
8. Using needle nose pliers, grip retainer.
9. While holding onto the lockbody and shackle, remove retainer.
10. Remove the two ball bearings.
11. Shackle and shackle spring can not be removed due to the shackle retaining pin being pressed in place.
12. Remove cylinder retaining pin.

#### **REASSEMBLY OF PADLOCK**

1. Insert cylinder retaining pin into hole in lockbody. (A light grease may be needed to keep the pin from falling out during the following operations.)
2. Hold the lockbody with cylinder plug hole pointing upward and the shackle in the closed position. (Grasp body with hand and use table top to hold shackle.)
3. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
4. Insert retainer assembly into the plug hole with spring tip opposite the retaining pin hole of the lockbody. (Retainer washer tab and spring end must be correctly positioned before inserting retainer assembly into lockbody.)
5. Push retainer down until it bottoms out in hole
6. Insert cylinder assembly with key into plug hole. Push down and rotate clockwise until it seats and engages with the retainer.
7. Rotate retainer approximately 45 degrees.
8. Release force on shackle and rotate key clockwise approximately 90 degrees until the shackle opens. Retainer assembly is now wound properly.
9. Rotate key counterclockwise approximately 30 degrees.
10. Rotate shackle to expose shackle hole and push retaining pin into slot of cap with small tool.
11. Insert the retaining screw and tighten.

Note: When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

Service Parts reference pages 34 - 35.

### **BLADE TUMBLER CYLINDER – SERIES L50**

Using standard commercial retainer (non-key retaining feature)

#### **DISASSEMBLY OF PADLOCK**

1. Insert key and rotate clockwise to open shackle.
2. Rotate shackle to expose shackle hole.
3. Using a flat blade screwdriver, remove the retaining screw that is at the bottom of the exposed shackle hole.
4. Rotate key counterclockwise approximately 30 degrees.
5. Place side of lockbody on flat surface with open shackle hole down. Hit side of the lock with a leather or plastic mallet. You are forcing the retaining pin into the space that the screw occupied. If you will refer to the drawing, you will notice that the pin retains the cylinder by protruding into the slot of the cylinder cap. The pin needs to move just enough to release the cylinder.
6. Use key to remove the cylinder assembly.
7. Close shackle and hold in position.
8. Using needle nose pliers, grip retainer.
9. While holding onto the lockbody and shackle, remove retainer.
10. Remove the shackle and shackle spring.
11. Remove the two ball bearings.
12. Remove cylinder retaining pin.

#### **REASSEMBLY OF PADLOCK**

1. Insert cylinder retaining pin into hole in lockbody. (A light grease may be needed to keep the pin from falling out during the following operations.)
2. Insert shackle spring into shackle hole.
3. Insert shackle into shackle holes and hold in closed position.
4. Hold the lockbody with cylinder plug hole pointing upward and the shackle in the closed position. (Grasp body with hand and use table top to hold shackle.)
5. Insert the two ball bearings one at a time through the center plug hole and into the ballnest hole. One ball toward each shackle leg so that each ball bearing is in the ball pocket of each shackle leg. (A light grease may be needed to keep the ball bearings from falling out of position.)
6. Insert retainer assembly into the plug hole with spring tip opposite the retaining pin hole of the lockbody. (Retainer washer tab and spring end must be correctly positioned before inserting retainer assembly into lockbody.)
7. Push retainer down until it bottoms out in hole
8. Insert cylinder assembly with key into plug hole. Push down and rotate clockwise until it seats and engages with the retainer.
9. Rotate retainer approximately 45 degrees.
10. Release force on shackle and rotate key clockwise approximately 90 degrees until the shackle opens. Retainer assembly is now wound properly.
11. Rotate key counterclockwise approximately 30 degrees.
12. Rotate shackle to expose shackle hole and push retaining pin into slot of cap with small tool.
13. Insert the retaining screw and tighten.

Note: When servicing a lock assembly with a dead lock retainer (key retaining feature), the shackle must be in the closed position any time the key needs to be rotated and removed from the cylinder assembly.

Service Parts reference pages 36 - 37.

## *NOTES*



## *NOTES*



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